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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,567	09/27/2001	Tai-Her Yang	YANG3073/EM/7272	8926

7590 01/20/2006

BACON & THOMAS
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Alexandria, VA 22314

EXAMINER

LE, DANG D

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 01/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/963,567

Applicant(s)

YANG, TAI-HER

Examiner

Dang D. Le

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,6-13,15-19,22-24,26-29 and 31-43 is/are pending in the application.
- 4a) Of the above claim(s) 3,6-13 and 15-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-24,26-29 and 31-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/14/05 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 22-24, 26-29, and 31-43 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

3. Claims 29, 31-33, 37, and 39-42 are objected to because of the following informalities: replace "magnetic field structure" with – electric field structure – in the claims. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 22-24, 27, 29, 34-36, 39, and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Korthaus et al. (3,165,656).

Regarding claim 22, Korthaus et al. shows an electric machine, comprising:

- An electric field structure (11);
- A rotor (12) arranged to rotate relative to the electric field structure;
- A helical structure (13) situated between the rotor (12) and a rotary shaft (14), and a pre-stressed spring (26) situated at one end of the rotor (right), wherein said helical structure and said spring are arranged to enable axial displacement of the rotor relative to the shaft, and thereby vary electrical machinery characteristics of said electric machine (from on-state to off-state), in response to reverse torque resulting from interaction between said rotor (12), said electric field structure (11), and a load (the door) or driving device as the shaft rotates (shaft 14 is rotating, then braked because the door reaching its end position),
- Wherein when said reverse torque occurs, said rotor is displaced relative (Figure 2) to the shaft, thereby vary electrical machinery characteristics (to zero volt due to the opening of the switch 36).

Regarding claim 35, the claim is similar to claim 22 except that it further recites an external device for controlling the axial displacement of the rotor exteriorly. It is noted that Korthaus et al. also shows the external (because it is outside of the rotor) device (20, 21, etc.) for controlling the axial displacement of the rotor exteriorly (outside of the rotor).

Regarding claims 23, 24, 27, 29, 34, 36, 39, and 43, it is noted that Korthaus et al. shows the helical nut (13), control (switch 36).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 22, 26-28, 31-33, 37, 38, and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joong et al. in view of Krueger (6,249,069).

Regarding claim 22, Joong et al. shows all of the limitations of the claimed invention including:

- An electric field structure (11, Figure 12);
- A rotor (20B) arranged to rotate relative to the electric field structure;
- A spline structure (Figure 10) situated between the rotor and a rotary shaft (22), and a pre-stressed spring (48) situated at one end of the rotor, wherein said spline structure and said spring are arranged to enable axial displacement of the rotor relative to the shaft, and thereby vary electrical machinery characteristics of said electric machine (motor or generator), in response to reverse torque (due to direction of torque of rotor) resulting from interaction between said rotor, said electric field structure, and a load or driving device as the shaft rotates (the shaft is rotating either to generate electricity or to rotate the wheels),

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- Wherein when said reverse torque occurs, said rotor is displaced relative (Figure 12) to the shaft, thereby vary electrical machinery characteristics (motor to generator or vice versa.

Joong et al. does not use helical structure.

Krueger shows that either the spline or helical structure can be used for the purpose of providing relative axial movement between the rotor and the stator.

Since Joong et al. and Krueger are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use helical structure as taught by Krueger for the purpose discussed above.

Regarding claim 35, the claim is similar to claim 22 except that it further recites an external device for controlling the axial displacement of the rotor exteriorly. It is noted that Joong et al. also shows the external device (46) for controlling the axial displacement of the rotor exteriorly (outside of the rotor).

Regarding claims 26-28, 31-33, 37, 38, and 40-42, it is noted that Joong et al. also show all of the limitations of the claimed invention including second spring (Figure 13), motor and generator, the varying electrical machinery characteristics of the rotor along the length and physical properties (due to the magnetic poles and gaps in Figure 15), and longer length (Figure 1).

Information on How to Contact USPTO

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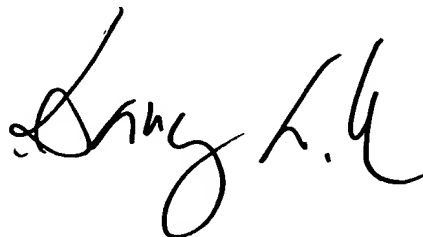
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D. Le whose telephone number is (571) 272-2027.

The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

1/15/06

A handwritten signature in black ink, appearing to read 'Dang D. Le', is written over the printed name.

DANG LE
PRIMARY EXAMINER